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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,780	04/19/2005	Thomas Schafer	EL/2-22773/A/PCT	6057

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EXAMINER

NELSON, MICHAEL E

ART UNIT	PAPER NUMBER
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1794

MAIL DATE	DELIVERY MODE
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03/20/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/531,780	Applicant(s) SCHAFFER ET AL.	
	Examiner MICHAEL E. NELSON	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-21 is/are pending in the application.
- 4a) Of the above claim(s) 3-9, 13 and 18-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 10-12 and 14-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

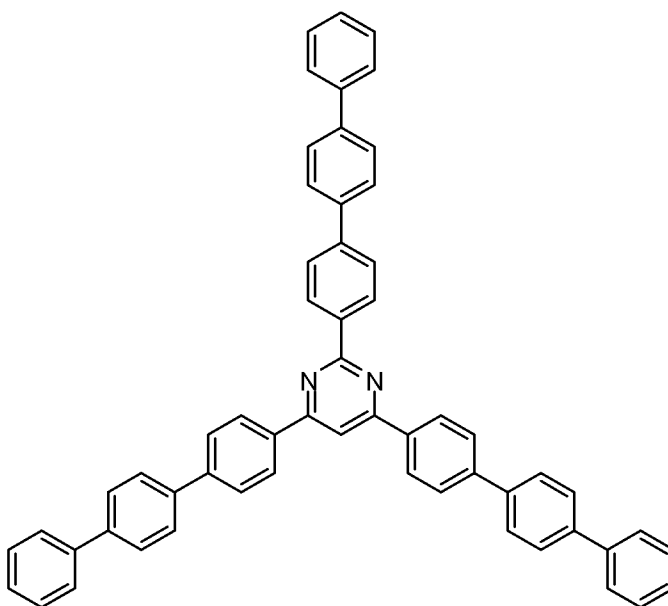
Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/15/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of the compound shown below in the reply filed on 1/24/2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 3-9, 13, 18-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 01/24/2008.



Claim Objections

3. Claims 1 and 17 are objected to because of the following informalities:
4. In claim 1, the phrase "one **ore** more pyrimidine moieties" should be corrected to "one **or** more pyrimidine moieties."

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5. In claim 17, the text should be corrected to place a semicolon between “substituted or unsubstitutedH” to read, “substituted or unsubstituted; H;” to properly indicate that H is an appropriate value for V,W, Y, and X
6. Claim 12 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.
7. Claim 12 depends from claim 17 and claims a pyrimidine compound, whereas claim 17 claims an electroluminescent device comprising a compound. The compound should be a separate independent claim, and the substituents defined separately. For the purposes of examination, the claim will be interpreted using the substituent definitions from claim 17.
8. Claim 16 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.
9. Claim 16 depends from claim 11 and claims a pyrimidine compound, whereas claim 11 claims an electroluminescent device comprising a compound. The compound should be a separate independent claim, and the substituents defined separately. The substituents are fully defined in claim 16, so the claim will be examined independent of claim 11.
10. Examiner notes that non-examined claim 13 will also have the same issue.

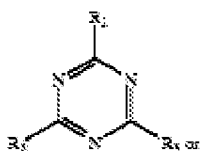
11. Appropriate correction is required.

Claim Rejections - 35 USC § 103

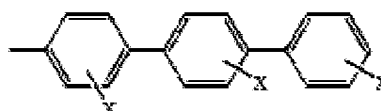
12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 1, 10-12 and 14-17 rejected under 35 U.S.C. 103(a) as being unpatentable over Fink et al. (6,352,791) in view of Thelakkat et al. (Polymers for Advanced Technologies, vol. 9, pp. 429-442, 1998) and Schomaker et al. (Journal of Organic Chemistry, vol. 66, no. 21, pp. 7125-7128, 2001).
14. Concerning claims 1, 10-11 and 16-17, Fink et al. describe Organic electroluminescent devices comprising at least two electrodes (an anode and cathode) with a plurality of layers between the two electrodes, at least one of which comprises the triazine compounds discussed above. (claims 1 and 2).
15. Concerning claims 12, 14-15, Fink et al. describe electron transport materials for organic electroluminescent devices based on a triazine core structure. Fink describes mono-triazine compounds with the following structure, where each of R_1 - R_3 is defined by the second structure below. (column 2)



(1)



16. Fink et al. are silent on the use of pyrimidine compounds as the electron transport compounds.

17. Thelakkat et al. reviews Low molecular weight and polymeric heterocyclics as electron transport/Hole-blocking materials in organic Light-emitting diodes. Thelakkat et al. discloses that candidate for electron transporting materials are nitrogen/oxygen containing π -deficient heterocyclics including pyrimidines and triazines (page 430, column 2, and Figure 2, page 431). Tri-aryl substituted pyrimidines are synthetically readily available using standard methods described by Schomaker et al., using Suzuki coupling reactions (see Scheme 2, page 7126).

18. Concerning claims 12, and 14-15, given the structures described by Fink et al. for electron transporting materials for organic electroluminescent devices, with the teaching by Thelakkat et al. that pyrimidines, as well as triazines function as electron transporting materials in organic electroluminescent devices, and standard methods for producing tri-aryl substituted pyrimidines by Suzuki coupling as described by Schomaker et al., it would have been obvious to one of ordinary skill in the art to synthesize the analogous pyrimidine compound, and predict that it would function as an electron transporting material in an organic electroluminescent device.

19. Concerning claims 1, 10-11 and 16-17, Fink et al. describe Organic electroluminescent devices discussed above. Given the teaching by Thelakkat et al. on the use of pyrimidine compounds as well as triazine compounds as electron transporting materials in organic electroluminescent device, it would have been obvious to one of ordinary skill in the art to use the pyrimidine compounds in an organic

electroluminescent device, and predict that they would function as electron transporting materials, and that the resulting electroluminescent devices would function in the same manner.

Double Patenting

20. Claims 1, 10-12 and 14-17 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 9-10 of copending Application No. 11/587691. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims encompass the same specific embodiment described in the current application, specifically compounds and electroluminescent devices comprising compound having the formula discussed above.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1, 10-12 and 14-17 are directed to an invention not patentably distinct from claims 1 and 9-10 of commonly assigned Application No. 11/587691. See discussion above.

21. The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned Application No. 11/587691, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the

conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

Conclusion

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wu et al. (Applied Physics Letters, vol. 81, no. 4, pp. 577-579) and Wong et al. (Organic Letters, vol. 4, no. 4, pp. 513-516, 2002) both describe pyrimidine compounds as light emitting materials in organic electroluminescent devices, but not the elected species. The references included on the international search report do not discuss the elected species.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL E. NELSON whose telephone number is (571)270-3453. The examiner can normally be reached on M-F 7:30am-5:00pm EST (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael E. Nelson
Examiner
Art Unit 1794

/Callie E. Shosho/
Supervisory Patent Examiner, Art Unit 1794